

## A Real-Time Turbulence Hazard Cockpit Display, Phase I

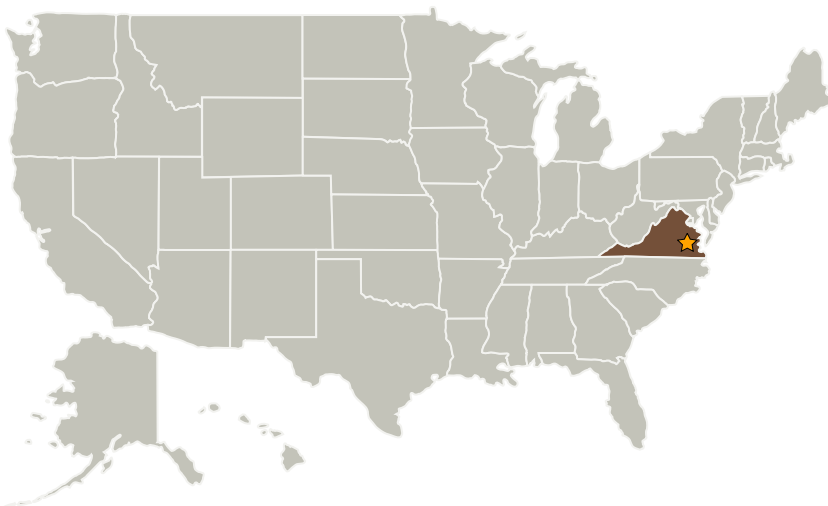
Completed Technology Project (2005 - 2005)



## Project Introduction

Aircraft encounters with turbulence are the leading cause of injuries in the airline industry and result in significant human, operational, and maintenance costs to the airline community each year. A large contributor to the above injuries and costs is that flight crews do not have sufficient situational awareness of the location and severity of potential turbulence hazards to their aircraft. AeroTech will improve pilots' situational awareness of turbulence hazards by developing an integrated, graphical cockpit display of turbulence hazard information scaled to their specific aircraft. This display will negate the need for inference that is required to interpret current turbulence information. With better knowledge of turbulence hazards' severity and location, pilots will be able to avoid turbulence encounters or prepare for them by having all occupants seated with seatbelts on, thereby avoiding injuries. Phase I work will develop, based on pilot input, a concept of operations and a requirements document for this display, evaluate several potential turbulence hazard information sources, and define requirements for simulations to be carried out in Phase II. By the end of Phase II an intuitive and meaningful cockpit, turbulence hazard display will be developed and tested using simulations and operational flight evaluations.

## Primary U.S. Work Locations and Key Partners



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## Organizational Responsibility

### Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

### Lead Center / Facility:

Langley Research Center (LaRC)

### Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

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Organizations Performing Work	Role	Type	Location
★ Langley Research Center(LaRC)	Lead Organization	NASA Center	Hampton, Virginia
Aerotech Research	Supporting Organization	Industry	Newport News, Virginia

## Primary U.S. Work Locations

Virginia

## Project Management

**Program Director:**

Jason L Kessler

**Program Manager:**

Carlos Torrez

**Principal Investigator:**

Paul E Robinson

## Technology Areas

**Primary:**

- TX12 Materials, Structures, Mechanical Systems, and Manufacturing
  - └ TX12.4 Manufacturing
    - └ TX12.4.4 Sustainable Manufacturing